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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/902,095	07/11/2001	Richard Kirchofer	017750-328	8095

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EXAMINER

ISSING, GREGORY C

ART UNIT	PAPER NUMBER
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3662

DATE MAILED: 02/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/902,095

Applicant(s)

KIRCHOFER ET AL.

Examiner

Gregory C. Issing

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1, 3, 4, 9-13, 16-18, 24, 25, 31 and 33-36 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Velaquez et al.

3. Velaquez et al disclose the claimed apparatus and method for selectively receiving a radio frequency signal, see Figure 7 and Figure 12, for example.

4. Applicants argue that the Examiner has failed to present a *prima facie* case of unpatentability in view of the cited references and therefore the rejections are deficient and should be withdrawn. All of the claims are rejected under 35 USC 102, i.e. anticipation not obviousness, and the Examiner has particularly identify a plurality of references as well as made statements regarding the references teaching the invention. It is therefore incumbent upon the applicant to show the distinctions between the claimed subject matter and the prior art cited, which prior art clearly anticipates the claims. The applicants' statement fails to show how the claim language distinguishes the subject matter from the prior art. Applicants argue that Velaquez et al fail to disclose or suggest a receiver "such as set forth in claim 1". Again, applicants have failed to show how the claim language distinguishes over the prior art. Specifically, applicants argue that Velaquez et al are directed to a communication system wherein an array is provided on the base station rather than on the receiver as is presently claimed, and thus the pointing vector directs communication to a hand set but does not teach a receiver that forms a pointing vector using a navigational controller to direct beamforming electronics to form reception lobes in the direction of the pointing vector. Applicants allege that

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Velaquez et al, while teaching beamforming, does not disclose forming reception lobes using constructive interference. Velaquez et al allegedly selects and uses a single element that points in the direction of the target handset. It is for these reason, the applicants allege that claim 1 is patentable and the rejection should be withdrawn. Accordingly, the applicants allege that since claim 1 is patentable, the claims which are dependent thereon are patentable. Likewise, for reasons similar to claim 1, independent claim 31 and its respective dependent claims are patentable. None of the features noted above for which claim 1 is deemed patentable can be found in the recitation of claim 1, including the location of the receiver, the direction of the reception lobes, the use of constructive interference nor do the statements accurately describe what the prior art teaches, including “uses a single element”, “at a basestation”, or “does not use constructive interference”. Figure 7 clearly anticipates two mobile cellular phones 8 having an array of antenna elements 52 coupled to a beamformer 34 that is controlled 320 in response to navigation information from a GPS receiver 350. additionally, Figures 12 and 13 show the use of constructive interference via the fact that the programmable beamformer selectively weights the antenna signals to form and steer beams in desired directions while providing nulling to reduce undesired signals. Thus, applicants’ request for the withdrawal of the rejection on the basis that claim 1 recites features not shown in the prior art is denied as being insufficient for failing to show how the claim language of claim 1 distinguishes over the prior art and for not accurately identifying the teachings of the prior art.

5. Claims 1, 3, 4, 9-13, 16-18, 24, 25, 31 and 33-36 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Taniguichi et al.

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6. Taniguishi et al disclose the claimed apparatus and method for selectively receiving a radio frequency signal, see Figure 2 including an array of antenna elements 11, position information extraction-classification-direction determination sections (16, 19, 20) which reads on the navigational controller for determining a pointing vector from coordinate information, and a directivity control section 15 coupled to the antenna array and the navigational controller for forming one or more beams.

7. Applicants argue that the Examiner has failed to present a *prima facie* case of unpatentability in view of the cited references and therefore the rejections are deficient and should be withdrawn. All of the claims are rejected under 35 USC 102, i.e. anticipation not obviousness, and the Examiner has particularly identify a plurality of references as well as made statements regarding the references teaching the invention. It is therefore incumbent upon the applicant to show the distinctions between the claimed subject matter and the prior art cited, which prior art clearly anticipates the claims. The applicants' statement fails to show how the claim language distinguishes the subject matter from the prior art. Applicants argue that claims 1 and 31 are patentable over Taniguichi et al since Taniguichi et al fail to show beam forming, reception lobes formed by multiple elements and use of GPS and therefore the rejections should be withdrawn. Firstly, these arguments are contrary to the teachings specifically set forth in Taniguichi et al. The directivity control section 15 is responsive to transmission/reception processing section and directivity determination section so as to form one or more beams that may adaptively be changed in direction and/or width and therefore is a "beamformer." In view of the fact that the antenna array forms one or more beams, the applicants' allegation that there are not "any reception lobes formed by multiple elements" is contrary to the teachings of

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Taniguichi et al. Applicants' apparent allegation that only one antenna element is used is unfounded and contrary to the operations of an adaptive antenna array, which controls the antenna elements so as to provide beams which are capable of changing direction and widths of at least one antenna beam while also providing nulls. Taniguichi et al also suggests the use of GPS to provide absolute position; as the base station requires knowledge of its absolute position in order to determine the directional vectors on the basis of mobile stations transmitted absolute positions, the use of a GPS receiver at the base station is anticipated. Additionally, the applicants allege distinction over claims 1 and 31, neither of which incorporates claimed features to GPS. Thus, applicants' request for the withdrawal of the rejection on the basis that claim 1 recites features not shown in the prior art is denied as being insufficient for failing to show how the claim language of claim 1 distinguishes over the prior art and for not accurately identifying the teachings of the prior art.

8. Claims 1-6, 8-31, and 33-36 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Bartholomew.

9. Bartholomew discloses the claimed apparatus and method for selectively receiving a radio frequency signal as exemplified in Figure 15A, comprising an array of antenna elements (10, 56 or 78), a base station controller 1508 (1208) which provides navigational control by determining geographical location of each mobile user in terms of azimuth, distance and velocity, and antenna array controller 1204 which is coupled between the antenna array and the navigational controller in order to form antenna beams.

10. Applicants argue that the Examiner has failed to present a *prima facie* case of unpatentability in view of the cited references and therefore the rejections are deficient and

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should be withdrawn. All of the claims are rejected under 35 USC 102, i.e. anticipation not obviousness, and the Examiner has particularly identify a plurality of references as well as made statements regarding the references teaching the invention. It is therefore incumbent upon the applicant to show the distinctions between the claimed subject matter and the prior art cited, which prior art clearly anticipates the claims. The applicants' statement fails to show how the claim language distinguishes the subject matter from the prior art. Applicants argue that Bartholomew fails to suggest the use of reception lobes, formed in response to a pointing vector directed at a signal source. Additionally, applicants allege that Bartholomew would not operate in a hostile environment and that the system is adjusted for the lowest signal strength rather than amplifying a weak signal by constructive interference. With respect to the last statements, applicants argue apparent operational characteristics without showing how the claim language distinguishes over the prior art. Thus, such remarks are not convincing and fail to properly identify how the claims suggest patentability over the prior art. With respect to the alleged failure to suggest the use of reception lobes, it is not understood what the applicants are alleging. Operation of an antenna/antenna array necessarily requires a reception beam(s) in order to receive a signal. Any reception beam meets the scope of a reception lobe, while further every real directional antenna comprises sidelobes which further meet the scope of reception lobes. Bartholomew is clearly directed to an apparatus for receiving a radio frequency signal by forming beams that are responsive to a pointing vector, i.e. azimuth and range from the base station to each of the mobile users. Thus, the applicants' arguments are not persuasive.

11. Claims 1-36 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Dixon.

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12. Dixon discloses an apparatus and method for receiving a radio frequency signal including, in a preferred embodiment, a phased array antenna 204 comprising a plurality of patch elements 302 and 303, a navigational receiving antenna 304 and an orientation means 305 wherein the phased array elements are controlled in response to the determined navigational information of the earth station, the orientation of the array and the pointing vector to the desired satellite as provided by control processor 203.

13. Applicants argue that the Examiner has failed to present a *prima facie* case of unpatentability in view of the cited references and therefore the rejections are deficient and should be withdrawn. All of the claims are rejected under 35 USC 102, i.e. anticipation not obviousness, and the Examiner has particularly identify a plurality of references as well as made statements regarding the references teaching the invention. It is therefore incumbent upon the applicant to show the distinctions between the claimed subject matter and the prior art cited, which prior art clearly anticipates the claims. The applicants' statement fails to show how the claim language distinguishes the subject matter from the prior art. Applicants argue that Dixon does not suggest the use of an array of antenna elements, there is no need for a pointing vector and since the system uses a single fixed-gain antenna, there is no need for beamforming to form reception lobes by controlling the phase of the antenna element of the array. For these reasons, the applicants allege that claim 1 and claim 31 are patentable as are the claims depending thereon. The applicants' arguments are contrary to the teachings of Dixon. Specifically, in the preferred embodiment the antenna is comprised of a phased array antenna thus refuting the allegation that Dixon teaches a single fixed-gain antenna with no beamforming by controlling the phase of the antenna element(s) of the array. in view of the fact that the applicants' argument is

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contrary to the teachings of Dixon, the applicants' argument is not persuasive and the rejection is not withdrawn.

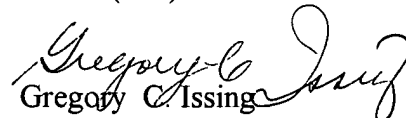
14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (703)-306-4156. The examiner can normally be reached on Mon-Thurs 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (703)-306-4171. The fax phone numbers for the organization where this application or proceeding is assigned are (703)-872-9326 for regular communications and (703) 872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.


Gregory C. Issing

Primary Examiner

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gci

February 12, 2003